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AUTOMOTIVE IGNITION MONITORING SYSTEM  
WITH MISFIRE AND FOULED PLUG DETECTION

Abstract Of The Disclosure

An automotive ignition diagnostic system includes an ion current detection circuit producing a buffered representation of an ion current flowing across an electrode gap of an ignition plug in response to a bias voltage applied thereto. An ignition diagnostic circuit is responsive to the buffered representation of the ion current to charge a single integration capacitor. The diagnostic circuit is operable to produce an output signal having a pulse width defined by the amount of charge on the capacitor. When the ion current flows following a combustion event, the width of the output signal is controlled as a function of the quality of combustion in the corresponding cylinder. However, if sufficient ion current flows prior to combustion, the width of the output signal is controlled to indicate a fouled ignition plug.

TECHNICAL DRAWING